WHAT IS CLAIMED IS:

1. The method for generating an aerosol comprising the steps of:

(a) heating a physiologically active compound to vaporize at least a portion of said compound;

(b) mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(c) administering the resulting aerosol to a patient.

2. The method of claim 1 wherein the ratio of the vapor to gas is controlled by measuring and regulating the flow of said gas.

3. The method of claim 2 wherein the ratio of vapor to gas is also controlled by regulating the rate of vaporization.

4. The method of claim 1 wherein the ratio of vapor to gas is controlled by regulating the rate of vaporization.

5. The method of claim 2 wherein the ratio of vapor to gas is controlled by the patient regulating the flow rate of the gas.

6. The method of claim 5 wherein the patient is alerted with an annunciating signal that the flow rate of gas is outside a desired range.

7. The method of claim 5 wherein the ratio of vapor to gas is controlled by regulating the rate of vaporization.

8. The method of claim 7 wherein the vaporization rate is controlled by changing the energy transferred to said compound during step (a).

9. The method of claim 4 wherein the vaporization rate is controlled by changing the energy transferred to said compound during step (a).

10. The method of claim 1 wherein the ratio of vapor to gas is controlled by regulating the gas at a desired rate, monitoring the gas flow rate and stopping energy transferred to said compound during step (a) in the event the desired flow rate is not maintained.

11. The method of claim 10 wherein the patient is alerted with an annunciating signal if said compound is not being vaporized.

12. The method of claim 4 wherein said compound is moved in a heating-vaporization zone during step (a) and the vaporization rate is controlled by changing the rate said compound is moved into the zone.

13. The method of claim 11 wherein the ratio of vapor to gas is controlled by regulating the gas flow to a maximum flow rate and stopping the compound from being vaporized in step (a) if the minimum flow rate is not maintained.

14. The method of claim 1 wherein said compound is deposited onto a substrate prior to step (a).

15. The method of claim 1 wherein said compound is vaporized at a temperature below the boiling point of said compound by passing a gas across the surface of said compound.

16. The method of claim 1 wherein said particle size is in the range of about 1 to about 3 microns.

17. The method of claim 1 wherein said particle size is in the range of about 10 to about 100 nanometers.

18. The method of claim 1 wherein said gas is air.

19. The method of claim 1 wherein said compound is selected from the group consisting of cannabinoid extracts from cannabis, THC, ketorolac, fentanyl, morphine, testosterone, ibuprofen, codeine, nicotine, Vitamin A, Vitamin E acetate, Vitamin E, nitroglycerin, pilocarpine, mescaline, testosterone enanthate, menthol, phencaramide, methsuximide, eptastigmine, promethazine, procaine, retinol, lidocaine, trimeprazine, isosorbide dinitrate, timolol, methyprylon, etamiphyllin, propoxyphene, salmetrol, vitamin E succinate, methadone, oxprenolol, isoproterenol bitartrate, etaqualone, Vitamin D3, ethambutol, ritodrine, omoconazole, cocaine, lomustine, ketamine, ketoprofen, cilazaprol, propranolol, sufentanil, metaproterenol, pentoxapylline, captopril, loxapine, cyproheptidine, carvediol, trihexylphenadine, alprostadil, melatonin, testosterone proprionate, valproic acid, acebutolol, terbutaline, diazepam, topiramate, pentobarbital, alfentanil HCl, papaverine, nicergoline, fluconazole, zafirlukast, testosterone acetate, droperidol, atenolol, metoclopramide, enalapril, albuterol, ketotifen, isoproterenol,

amiodarone HCl, zileuton, midazolam, oxycodone, cilostazol, propofol, nabilone, gabapentin, famotidine, lorezepam, naltrexone, acetaminophen, sumatriptan, bitolterol, nifedipine, phenobarbital, phentolamine, 13-cis retinoic acid, droprenilamine HCl, amlodipine, caffeine, zopiclone, tramadol HCl, pirbuterol, naloxone, meperidine HCl, trimethobenzamide, nalmefene, scopolamine, sildenafil, carbamazepine, procaterol HCl, methysergide, glutathione, olanzapine, zolpidem, levorphanol, buspirone and mixtures thereof.

20. The method of claim 1 wherein said compound is heated to a temperature for a period of time to cause substantial vaporization.

21. The method of claim 20 wherein said period of time is no greater than about 2 seconds.

22. The method of claim 20 wherein the period of time is in the range of about 1 millisecond to 2 seconds.

23. The method of claim 1 wherein said gas is mixed at a closely controlled flow rate to mix the compound evenly into the gas.

24. The method of claim 20 wherein the mixing is done to prevent an unacceptable increase in the gas temperature.

25. The method of claim 24 wherein the gas temperature increase is maintained at no greater than about 15°C.

26. The method of claim 24 wherein the gas flow rate is maintained substantially constant.

27. The method of claim 26 wherein a laminar gas flow across the surface of the compound is maintained.

28. The method of claim 24 wherein the gas flow across the surface is highly turbulent.

29. The method of claim 14 wherein a thin film of said compound is deposited on said substrate and said gas is swept across the film.

30. The method of claim 1 wherein said compound is heated in a container and the resulting vapor is passed from the container into a gas stream through at least one mixing nozzle or orifice.

31. The method of claim 29 wherein said compound is heated by moving said substrate through an alternating magnetic field to inductively heat the substrate.

32. The method of claim 31 wherein said substrate is a metallic foil.

33. The method of claim 32 wherein said substrate is a stainless steel foil.

34. The method of claim 29 wherein said substrate has a low thermal conductivity value.

35. The method of claim 33 wherein said compound is deposited onto said stainless steel foil at a thickness of no greater than about 10 microns.

36. The method of claim 14 wherein the deposited compound has a surface area of about 1 to about 10 cm^2.

37. The method of claim 31 wherein the alternative magnetic field is maintained less than about 1 MHz.

38. The method of claim 31 wherein the frequency of said field is maintained between about 100 and about 300 kHz.

39. The method of claim 31 wherein a ferrite core is used to control the shape of said alternating magnetic field.

40. The method of claim 39 wherein said substrate has a plurality of sections that are heated sequentially.

41. The method of claim 40 wherein said ferrite core has a saturation value such that by changing the drive frequency and amplitude the resulting magnetic field expands to sequentially heat each of said sections and to vaporize the respective portions of said compound.

42. The method of claim 41 wherein said ferrite core has a variable air gap so that the resulting magnetic field expands to sequentially heat each of said sections and to vaporize the respective portions of said compound by varying the shape of said air gap of said ferrite core.

43. The method of claim 42 wherein the ferrite core is a toroid shape with a slit cut through it.

44. The method of claim 1 wherein said physiologically active compound is deposited onto a thermally conductive substrate that is heated by transmitting a thermal energy gradient from one part of said substrate to other parts.

45. The method of claim 1 wherein said compound is contained in a heating-vaporization zone having a restricted cross-sectional area such that the resulting vapor is rapidly mixed into said gas flowing through said zone in a ratio that results in the desired particle size after a stable concentration of particles in the gas is reached.

46. The method of claim 45 wherein said particle size is in the range of about 1 to about 3 microns.

47. The method of claim 45 wherein said particle size is in the range of about 10 to about 100 nanometers.

48. The method of claim 45 wherein the pressure drop of the restricted gas flow is maintained at no greater than 10 inches of water.

49. The method of claim 1 wherein said compound is sequentially heated by changing the focus of photon energy in the vicinity of said compound.

50. The method of claim 1 wherein said compound is deposited on a substrate having a plurality of sections that are heated sequentially.

51. The method of claim 50 wherein each of said sections is heated with photon energy.

52. The method of claim 50 wherein each of said sections is heated with resistive heaters.

53. The method of claim 50 wherein each of said sections is heated by inductive means.

54. The method for delivering an aerosol to a patient comprising the steps of:

(a) heating a physiologically active compound to vaporize at least a portion of said compound; and

(b) simultaneously mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached and

(c) administering the resulting aerosol to a patient.

55. The method for delivering an aerosol to a patient comprising the steps of:

(a) continuously introducing a physiologically active compound into a heating zone to vaporize at least a portion of said compound;

(b) simultaneously mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(c) administering the resulting aerosol to a patient.

56. The method for delivering an aerosol to a patient comprising the steps of:

(a) depositing a physiologically active compound onto a substrate;

(b) sequentially heating parts of said compound to vaporize at least a portion of said compound;

(c) simultaneously mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(d) administering the resulting aerosol to a patient.

57. The method of claim 56 wherein said compound is deposited onto a thermally conductive substrate that is heated by transmitting a thermal energy gradient from one part of said substrate to other parts.

58. The method of claim 56 wherein said compound is sequentially heated by changing the focusing of photon energy onto said compound.

59. The method of claim 56 wherein the physiologically active compound is deposited on a substrate having a plurality of sections that are heated sequentially.

60. The method of claim 59 wherein each of said sections is heated with photon energy.

61. The method of claim 59 wherein each of said sections is heated with resistive heaters.

62. The method of claim 59 wherein each of said sections is heated by inductive means.

63. The method of claim 59 wherein the sections are heated by thermal radiation from a heating element.

64. The method of claim 59 wherein the sections are heated by dielectric heating.

65. The method for delivering an aerosol to a patient comprising the steps of:

(a) sequentially heating parts of a physiologically active compound to vaporize at least a portion of said compound;

(b) simultaneously mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(c) administering the resulting aerosol to a patient.

66. A device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a tube within said housing through which a gas is passed;

(c) a moveable frame within said tube containing a layer of a physiologically active compound;

(d) a heater system for heating said compound to a temperature to cause substantial vaporization;

(e) an actuator for activating said heater means to cause energy to transfer to said compound; and

(f) a control means for controlling the ratio of the resulting vapor to said gas passing through said tube and across the surface of said compound to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

67. The device of claim 66 wherein said control means is a flow regulator system for measuring and regulating the flow of said gas passing through said tube.

68. The device of claim 67 wherein said control means also includes a controller for controlling the vaporization rate.

69. The device of claim 66 wherein said control means is a controller for controlling the vaporization rate.

70. The device of claim 67 wherein said flow regulator system comprises a flow regulator valve and a measuring device for measuring gas flow rate.

71. The device of claim 70 wherein said control means includes an annunciating means for alerting the patient that the gas flow rate is outside of a desired range so that the patent can adjust the patient's inhalation rate to the desired range.

72. The device of claim 66 wherein said control means comprises a measuring device for measuring gas flow rate and a controller for controlling the vaporization rate by controlling the energy transferred to said compound by said heating system.

73. The device of claim 66 wherein said control means comprises a regulating device for regulating the gas flow through said tube at a desired rate, monitoring the gas flow rate and stopping energy transferred to said compound by said heating system in the event the desired flow rate is not maintained.

74. The device of claim 73 wherein said device includes an annunciating means for alerting the operator that the compound is not being vaporized.

75. The device of claim 66 wherein said tube includes a heating-vaporization zone and said compound on said moveable frame is moved into said zone for vaporization and said control means comprises a measuring device for measuring gas flow rate and a controller for controlling the vaporization rate by changing the rate that said compound is introduced into said zone by controlling the rate of movement of said frame.

76. The device of claim 75 wherein said movement of said frame is controlled by a motor.

77. The device of claim 76 wherein said motor is a variable speed motor.

78. The device of claim 66 wherein a removable sub-assembly comprising a foil containing said compound within said movable frame and is positioned on a movable slide mounted within said tube.

79. The device of claim 78 wherein said compound is deposited onto a substrate and placed on said sub-assembly.

80. The device of claim 66 wherein an extension is connected to said outlet and is capable of being inserted into the patient's mouth.

81. The device of claim 66 wherein said heater means is an inductive heater generating an alternating magnetic field.

82. The device of claim 81 wherein the frequency of said magnetic field is maintained at less than 1 MHz.

83. The device of claim 81 wherein the frequency of said magnetic field is maintained between about 100 and about 300 kHz.

84. The device of claim 78 wherein the substrate is a metallic foil.

85. The device of claim 66 wherein said frame has a low thermal conductivity.

86. The device of claim 66 wherein said frame is electrically nonconductive.

87. The device of claim 81 wherein said inductive heater is powered by a capacitor charged with a voltage in an electronic circuit, and a switch for controlling the circuit.

88. The device of claim 87 wherein a ferrite core is used to generate an alternating magnetic field.

89. The device of claim 81 wherein a ferrite core is used to generate an alternating magnetic field.

90. The device of claim 89 wherein said magnetic field has a skin depth substantially greater that the thickness of the layer of said compound on said substrate.

91. The device of claim 89 wherein the ferrite core has a narrow slit to cause a narrow heating zone.

92. The device of claim 66 wherein said gas is air.

93. The device of claim 66 wherein said tube is a venturi tube to cause the gas to flow rapidly across the surface of said compound within said tube and through said outlet when said activator is activated.

94. A device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a thin walled tube within said housing containing a physiologically active compound coated on its interior surface;

(c) a heater system for heating said compound to a temperature to cause substantial vaporization of said compound by discharging electrical energy through said tube;

(d) an actuator operably coupled to said heater means for activating said heater system; and

(e) a control means for controlling the ratio of the resulting vapor to said gas passing through said tube and across the surface of said compound to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

95. The device of claim 94 wherein said control means is a flow regulator system for measuring and regulating the flow of said gas passing through said tube.

96. The device of claim 95 wherein said control means also includes a controller for controlling the rate of vaporization by controlling the electrical energy transferred to said compound by said heating system.

97. The device of claim 95 wherein said flow regulator system comprises a flow regulator valve and a measuring device for measuring gas flow rate.

98. The device of claim 94 wherein said tube includes a heating-vaporization zone with said compound within said zone and said control means comprises a controller for controlling the vaporization rate by the changing the size of the heating-vaporization zone.

99. The device of claim 98 wherein said heater means for heating is an inductive heater generating an alternating magnetic field.

100. The device of claim 99 wherein the frequency of said magnetic field is maintained at less than 1 MHz.

101. The device of claim 99 wherein the frequency of said magnetic field is maintained between about 100 and about 300 kHz.

102. The device of claim 101 wherein a ferrite is used to control the shape of the alternating magnetic field.

103. The device of claim 102 wherein said magnetic field has a skin depth substantially greater that the thickness of the substrate.

104. The device of claim 102 wherein the ferrite core has a narrow slit to cause a narrow heating zone.

105. The device of claim 94 wherein said tube is a venturi tube to cause the gas to flow rapidly across the surface of said compound within said tube and through said outlet when said activator is activated.

106. The device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a venturi tube within said housing having an inlet passage, an outlet passage in fluid communication with said inlet passage and a throat between said inlet passage and said outlet passage containing a layer of physiologically active compound; said throat having a sufficiently restricted cross-sectional area to result in an increase in the speed of the gas passing through said throat and across the surface of said compound;

(c) a heater system within said housing for heating said compound;

(d) an actuator operably coupled to said heater means and capable of activating the heater means; and

(e) a control means for controlling the ratio of the resulting vapor and said gas passing through said venturi tube and across the surface of said compound to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

107. The device of claim 106 wherein said control means is a flow regulator system for measuring and regulating the flow of said gas passing through said venturi tube.

108. The device of claim 107 wherein said flow regulator system comprises a flow regulator valve and a measuring device for measuring gas flow rate.

109. The device of claim 108 wherein said measuring device measures the flow rate through the device by measuring the pressure drop across said venturi tube.

110. The device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a tube within said housing through which a gas is passed to said outlet;

(c) an expandable container within said housing having an opening and containing a physiologically active compound;

(d) a passage connecting said opening and said tube;

(e) a heating system for heating said compound to a temperature to cause substantial vaporization, which will expand the container, and then to cause the resulting vapor to pass through the opening and said passage and to rapidly mix into said gas;

(f) an actuator operably coupled to and capable of activating said heater system; and

(g) a control means for controlling the ratio of said resulting vapor and said gas passing through said tube to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

111. The device of claim 110 wherein the compound in the container is packaged in a vacuum.

112. The device of claim 110 wherein the compound occupies the entire interior of the container.

113. The device of claim 110 wherein once the compound has expanded the container, due to vaporization, the compound is expelled from the container by compression of the exterior of the container.

114. The device of claim 113 wherein said control means is a regulator for controlling the rate of expulsion of the vaporized compound to control the ratio of the vaporized compound to the mixing gas.

115. The device of claim 110 wherein said control means is a flow regulator system for measuring and regulating the flow of said gas passing through said tube.

116. The device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a tube within said housing through which a gas is passed to the outlet;

(c) a container within said housing having an opening and containing a physiologically active compound packaged under an inert atmosphere;

(d) a passage connecting said opening and said tube;

(e) a heating system for heating said compound to a temperature to cause substantial vaporization, which will expand the container, and then to cause the resulting vapor to pass through the opening and said passage and to rapidly mix into said gas;

(f) an actuator operably coupled to and capable of activating said heater system; and

(g) a control means for controlling the ratio of said resulting vapor and said gas passing through said tube to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

117. The device of claim 116 wherein the inert atmosphere is re-circulated over the surface of the compound to aid in vaporization.

118. The device of claim 116 wherein the control means is a measuring device for measuring the flow rate and a control means for controlling the rate of vaporization by controlling the energy transferred to the compound by said heating system.

119. The device for delivering an aerosol to a patient comprising:

(a) a housing having an outlet;

(b) a first tube within said housing through which a first gas stream is passed, having a filter at each end and containing a plurality of particles, each particle

having a large surface area to mass ratio and a coating of a physiologically active compound;

(c) a heating system for heating the compound to vaporization while simultaneously passing the first gas stream through said first tube and over the surface of the coated particles;

(d) a second tube connected to said outlet through which a second gas stream is passed and is combined with a mixture of the vaporized compound and the first gas stream from said first tube;

(e) an actuator operably coupled to said heater system and capable of activating said heater system; and

(f) a control means for controlling the ratio of said resulting vaporization of the compound and said gas passing through said first tube to form a desired particle size when a stable concentration of particles is reached in the resulting aerosol that is delivered through said outlet to the patient.

120. The device of claim 119 wherein the particles are selected from the group consisting of aluminum oxide, silica, coated silica, carbon, graphite, diatomaceous earth, and mixtures thereof.

121. The device of claim 119 wherein said control means is a flow regulator system for measuring and regulating the flow of said gas passing through said first tube.

122. The device of claim 121 wherein said flow regulator system comprises a flow regulator value and a measuring device for measuring gas flow rate.

123. The device of claim 119 wherein the compound is heated by heating the gas in the first tube and then passing the gas over the compound.

124. The method for generating an aerosol comprising the steps of:

(a) depositing a physiologically active compound onto an electrically conductive mesh or screen carrier;

(b) rapidly heating the carrier by passing a high current across the carrier to vaporize at least a portion of the compound, while simultaneously passing a gas

through the carrier thereby mixing the resulting vapor with the gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(c) administering the resulting mixture to a patient.

125. The method of claim 124 wherein the carrier is a single layer of stainless steel mesh.

126. The method of claim 124 wherein the carrier is made of multi layers of material.

127. The method of claim 126 wherein the stainless steel mesh is 200 mesh.

128. The method of claim 124 wherein the high current in step (b) is supplied by the discharging of a capacitor.

129. The method of claim 124 wherein the current supplied is for less than about 20 milliseconds.

130. The method of claim 124 wherein the current supplied is from between about 2 and about 10 milliseconds.

131. The method for generating an aerosol comprising the steps of:

(a) heating a physiologically active compound to vaporize at least a portion of said compound;

(b) mixing the resulting vapor with a gas, in a ratio, to form a desired particle size when a stable concentration of particles in the gas is reached; and

(c) administering the resulting aerosol to an organ or tissue of a patient.

132. The method of claim 131 wherein the aerosol is administered to the eye.

133. The method of claim 131 wherein the aerosol is administered to the skin.

134. The method of claim 131 wherein the aerosol is administered to the mucosa.